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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,241	11/26/2003	Stephen C. Olson	02243-039001	6105

7590 01/08/2007  
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Washington, DC 20005-3500

EXAMINER
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PAHNG, JASON Y

ART UNIT	PAPER NUMBER
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3725

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/721,241

Applicant(s)

OLSON, STEPHEN C.

Examiner

Jason Y. Pahng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16-18,20-29 and 50-74 is/are pending in the application.
- 4a) Of the above claim(s) 55-74 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-18,20-29 and 50-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

There was no response to the objection made to claim 25 in the last Office action. If the objection of claim 25 is not made in the next Office action, this application will be abandoned because of non-compliant response.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 18, 20, 21, 25-27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Fay (US 3,559,895).

With regard to claim 16, Trost discloses a fluid energy mill including:

1. a monolithic manifold (11) having a front face (Figure 4) and a rear face (Figure 9);
2. the monolithic manifold (11) including a cycloid-shaped grinding chamber (44) formed in the front face (Figures 1-3);
3. a feed inlet (22 and 23 of Figure 4) formed in the manifold (11);
4. a gas inlet (21 of Figure 4) formed in the manifold (11);
5. an outlet (29) formed in the rear face; and

6. a cover (84 of Figure 2).

While Trost does not specifically recite that Trost's grinding chamber is operable to impart particle-on-particle size reduction of material in the chamber, in a closely related art, Fay teaches that such a chamber may be used for reduction of material both by colliding of the particles and by abrading contact with the internal wall (column 2, lines 36-43). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a chamber may be used for reduction of material both by colliding of the particles and by abrading contact with the internal wall, as taught by Fay.

With regard to claim 20, Trost discloses a protective pocket (46, Figure 1).

With regard to claim 21, Trost discloses a barrier (near the reference number 55 in Figure 1) at a region where the material enters the grinding chamber.

With regard to claims 25 and 26, as well as can be understood, Trost discloses the feed inlet (22 and 23 of Figure 4) oriented at an angle of 30 degrees or more to a horizontal with respect to an upper surface of the monolithic manifold (11).

With regard to claim 27, Trost discloses a feed inlet (46) positioned tangent to a second radius (8 o'clock direction, Figure 1) larger than a first radius (6 o'clock direction, Figure 1).

With regard to claim 29, Trost discloses an outlet (29) positioned near the center.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Fay (US 3,559,895) as applied above, further in view of Coombe et al. (US 3,840,188). Trost (as modified) discloses a non-circular seal

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(87), but does not disclose a groove. In a closely related art, Coombe discloses a fluid energy mill with a groove for a seal in order to improve sealing. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost (as modified) with a groove for a seal in order to improve sealing, as taught by Coombe.

Claims 22-24 and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Trost (US 2,704,635) and Fay (US 3,559,895).

With regard to claim 22, Trost ('918) discloses a fluid energy mill including:

1. a manifold (11) having a front face and a rear face;
2. the manifold including a grinding chamber (44) and a feed inlet including a feed gas inlet (78) and a material funnel (74);
3. the manifold including a gas inlet (79) and an outlet (35) formed in the rear face; and
4. a cover (84).

As for the manifold (11) being monolithic and including a feed gas inlet and a material funnel, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the feed inlet in one piece and include a feed gas inlet and a material funnel, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). Furthermore, this is particularly true in the

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fluid energy mill art. It is well known in the art to form in one piece an article which has formerly been formed in two pieces. For example, Trost ('918) uses many parts which have formerly been formed in multiple pieces as shown in Trost ('635) in order to simplify the manufacturing process. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost ('918) with a feed inlet in one piece and include a feed gas inlet and a material funnel in order to simplify the manufacturing process, as taught by Trost ('918) and Trost ('635). Fay is applied as applied in claim 16.

Claim 23 calls for an intersection of the feed gas inlet and the material funnel to form an elliptical hole. Fay discloses a fluid energy mill with an elliptical hole (Figure 11) in order to accommodate a slanted hopper (77). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with an elliptical hole in order to accommodate a slanted hopper, as taught by Fay.

Claims 24 and 50 call for a venturi formed in a position between the grinding chamber and the feed gas inlet. Fay discloses a venturi (76, Figure 11) in order to provide a diverging nozzle position between a grinding chamber and a feed gas inlet. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a venturi in order to provide a diverging nozzle position between a grinding chamber and a feed gas inlet, as taught by Fay.

Claims 51-54 call for a pair of nozzles with an outlet formed in positions adjacent to the grinding chamber. Fay discloses a pair of nozzles (88, Figure 13) with an outlet formed in positions adjacent to the grinding chamber in order to supply additional

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grinding fluid. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a pair of nozzles with an outlet formed in positions adjacent to the grinding chamber in order to supply additional grinding fluid, as taught by Fay.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Fay (US 3,559,895) in view of Andrews (US 2,032,827).

Claim 28 calls for a gas to enter the grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than the first radius.

Andrews discloses a gas entering (25) a grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than a first radius (Figure 1) in order to provide both a forward tangential component and inward component (page 5, lines 25-35) to create high velocity vortex. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a gas entering a grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than a first radius, in order to provide both a forward tangential component and inward component to create high velocity vortex, as taught by Andrews.

### **Allowable Subject Matter**

The invention disclosed in the application, including all of the major characteristics in the disclosure, appears to contain allowable subject matter. However, each of the claimed invention is rejected as above. For example, Applicant's invention

shown in Figures 8 and 9 contains several features and characteristics which make it distinct from the apparatus shown in Figure 1.

### ***Response to Arguments***

Applicant's arguments filed November 3, 2006 have been fully considered but they are not persuasive.

Applicant argues that Trost as modified by Fay does not teach a chamber capable of particle-on-particle size reduction within the chamber. However, Trost as modified by Fay teaches a chamber capable of particle-on-particle size reduction within the chamber because Fay specifically teaches that such a chamber may be used for reduction of material both by colliding of the particles and by abrading contact with the internal wall (column 2, lines 36-43).

Applicant does not present any additional new arguments for the rest of the claims.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

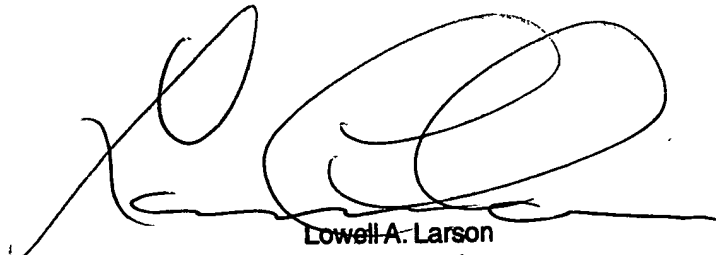
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Y. Pahng whose telephone number is 571 272 4522. The examiner can normally be reached on 9:30 AM - 8:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larson Lowell can be reached on 571 272 4519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JYP



Lowell A. Larson  
Primary Examiner